Statement of Basis - Narrative
NSR Permit

Type of Permit Action: Significant Revision

Facility: Jayhawk Compressor Station
Company: XTO Energy, Inc
Permit No(s).: 8152-M1
Tempo/IDEA ID No.: 38799 - PRN20200001
Permit Writer: Julia Kuhn

Fee Tracking:

Tracking	**NSR tracking entries completed:** [X] Yes [] No
	NSR tracking page attached to front cover of permit folder: [] Yes [] No NA
	Paid Invoice Attached: [X] Yes [] No
	Balance Due Invoice Attached: [] Yes [] No NA
	Invoice Comments: $22,578.00 paid in full

1.0 Plant Process Description:

Field gas flows into two inlet slug catchers. The site uses natural gas engines to compress the field gas to 1200-1300 psig, including nine (9) Caterpillar 3616TA engines (ENG1-ENG9) and two (2) Caterpillar 3516J engines (ENG11-ENG12). The Caterpillar engines are equipped with oxidation catalysts to reduce CO, VOC, and formaldehyde emissions.

The high-pressure gas is then dehydrated using triethylene glycol dehydration units (DEHY1-DEHY3), each handling up to 80 MMscfd. The systems are equipped with flash tanks and condensers. Flash tank vapors are recycled in the dehydration system. The glycol still vent vapors are routed to condensers. Uncondensed vapors are controlled by the vapor combustor (VC1). Dehydrated gas is then transferred to a sales pipeline.

Low pressure liquids generated anywhere in the system are routed to a low pressure three phase separator (LPS). Vapors from the LPS are controlled by a VRU and routed to compression. When the LPS-VRU are not operational, vapors from the LPS are routed to the flare system (FL1/FL2). From the LPS, oil at approximately 15 psig is transfered to four (4) oil storage tanks (OT1-OT4), which are controlled by the flare system (FL1/FL2). Water from the LPS flows to redundant skim tanks (SKT1/SKT2). The skim tanks are arranged as a redundant system in which one unit can be used if another is down for unforeseen circumstances. Water is then transferred to two (2) water tanks (WT1-WT2).

Any residual oil flows from the skim tanks into the oil storage tanks. The oil from the oil storage tanks are then pumped back into the high pressure three phase separator (HPS), to be transferred offsite via pipeline. Vapors from the water storage tanks and skim tanks are also controlled by the flare system (FL1/FL2). Oil can be trucked offsite or pumped offsite via pipeline, water is transferred offsite via pipeline to saltwater disposal (SWD).

High pressure liquids generated anywhere in the system are routed to high pressure three phase separator (HPS). Vapors from the high-pressure separator are routed back to the inlet slug catchers. From

the HPS, liquid hydrocarbons at approximately 400 psig are transferred offsite via pipeline. Water from the HPS is transferred offsite via pipeline to SWD.

The flare system (FL1/FL2) is also used to flare gas in the event of an emergency.

2.0 Description of this Modification:

XTO Energy, Inc is planning modification of the Jayhawk Compressor Station in Lea County, NM. The facility is a typical compressor station with natural gas engines, dehydration, storage tanks, and flares. Site construction is planned under NSR Permit 8152. This is a New Source Review permit application being submitted in accordance with 20.2.72 NMAC.

In addition to updating SSM and malfunction emissions, updating and revising calculations, the facility is proposing the following modifications:

1) Remove HTR2 and HTR3;
2) Remove ENG10 and ENG13;
3) Increase glycol circulation rate for DEHY1-3;
4) Decrease glycol regenerator reboiler (RB1-RB3) unit heat input from 3 MMBtu/hr to 2.0 MMBtu/hr;
5) Increase flare purge gas rates;
6) Remove FL3;
7) Update FL1-FL2 heights to 145';
8) Update tank throughputs;
9) Decrease condensate truck loading;
10) Add inlet gas flaring;
11) Increasing steady state flaring associated with increased tank throughput and glycol circulation rate; update sources that vent to flare.
12) Change sources that vent to VC1, only combusts vapors from DEHY1-3 still vent and pilot gas.
13) Update ENG1-9 and ENG11-12 VOC/formaldehyde/CO control efficiencies and update emissions factors from Caterpillar Gas Engine Rating Pro (GERP) analysis.
14) Update nomenclature of Gb1a and GB2a to SKT1 and SKT2.
15) Update facility location coordinates
16) Update low pressure separator pressure from 2 psig to 15 psig.
17) Added VOC malfunction emissions.

3.0 Source Determination:

1. The emission sources evaluated include Jayhawk Compressor Station.

2. Single Source Analysis:

A. SIC Code: Do the facilities belong to the same industrial grouping (i.e., same two-digit SIC code grouping, or support activity)? Yes

B. Common Ownership or Control: Are the facilities under common ownership or control? Yes

C. Contiguous or Adjacent: Are the facilities located on one or more contiguous or adjacent properties? Yes

3. Is the source, as described in the application, the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes? Yes

4.0 PSD Applicability:

A. The source, as determined in 3.0 above, is a minor source before and after this modification.

5.0 History (In descending chronological order, showing NSR and TV): *The asterisk denotes the current active NSR and Title V permits that have not been superseded.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
8152M1	*TBD	NSR – Significant Revision	Revision of emission factors, removal & addition of some equipment, increase of tank throughput and steady state flaring. See detailed information on the previous page.
8152		NSR – New	Initial permit issuance for new compressor station facility

6.0 Public Response/Concerns: On December 3, 2020, the Air Quality Bureau (AQB) received via email, a request for a Public Hearing from WildEarth Guardians (WEG) for the 20.2.72 NMAC NSR Significant Revision of the Jayhawk Compressor Station. A Copy of the comments can be found in the Administrative Record, as well as Tempo. The first AQB citizen letter was sent to WildEarth Guardians on December 7, 2020. The second AQB citizen letter was emailed on May 28, 2021. A hearing request was submitted to the Secretary and held October 25, 2021. The Hearing Officer issued a recommendation on December 27, 2021. On February 10, 2022 the Deputy Cabinet Secretary granted the issuance of the permit.

7.0 Compliance Testing: None.

8.0 Startup and Shutdown:

A. If applicable, did the applicant indicate that a startup, shutdown, and emergency operational plan was developed in accordance with 20.2.70.300.D(5)(g) NMAC? No
B. If applicable, did the applicant indicate that a malfunction, startup, or shutdown operational plan was developed in accordance with 20.2.72.203.A.5 NMAC? Yes
C. Did the applicant indicate that a startup, shutdown, and scheduled maintenance plan was developed and implemented in accordance with 20.2.7.14.A and B NMAC? Yes
D. Does the facility have emissions due to routine or predictable startup, shutdown, and maintenance? If so, have all emissions from startup, shutdown, and scheduled maintenance operations been permitted? Yes

9.0 Compliance and Enforcement Status: On November 4, 2020, I received a C&E verification email from Shannon Duran stating the following: **"**There are currently no ongoing NOVs or settlements with Enforcement for this facility. I am copying Mike on this email as he can check if this Facility is part of an XTO audit that we are tracking."

On November 30, 2020, I received an email from Michael Space stating the following statement: "I did not find the Jayhawk Compressor Station on the XTO audit list."

10.0 Modeling:

The current Modeling Report was completed by Angela Raso on January 4, 2021. The following types of emission sources are included in the project: Natural Gas Compressor Engines, Fuel Line Heater, Glycol Regenerator Reboilers, Still Vent emissions, Haul Roads, and Flares. There are three operation scenarios for the flares considered in this modeling – Normal Operation, SSM Operations, and Even Operations.

Modeling Assumptions: The facility operates continuously.
Permit Conditions: No additional conditions are required by this modeling.
Conclusion: *This modeling analysis demonstrates that operation of the facility described in this report neither causes nor contributes to any exceedances of applicable air quality standards. The standards relevant at this facility are NAAQS for CO, NO2, PM2.5, PM10, and SO2; NMAAQS for CO, NO2, and SO2; and Class I and Class II PSD increments for NO2, PM2.5, PM10, and SO2.*
Action: The permit can be issued based on this modeling analysis. Modeling

From previous SOB: Angela Raso completed the Modeling Report on 4/4/19. It included a set of six compressor stations: Jayhawk, Aggie, Handle, Bulldog, Pearl, and Horned Frog. The following is from Angela's report, dated 4/4/19:

Modeling Assumptions: The facility operates continuously. The flares are not used. Haul road use falls under insignificant activities.
Permit Conditions: Use of the flare at any of the facilities requires additional modeling.
Conclusion: *This modeling analysis demonstrates that operation of the facility described in this report neither causes nor contributes to any exceedances of applicable air quality standards. The standards relevant at this facility are NAAQS for NO2, PM10, PM2.5, and SO2; NMAAQS for CO, NO2, and SO2; and Class I and Class II PSD increments for NO2, PM10, PM2.5, and SO2.*
Action: The permit can be issued based on this modeling analysis.

11.0 State Regulatory Analysis(NMAC/AQCR):

STATE REGU-LATIONS Citation 20 NMAC	Title	Applies (Y/N)	Unit(s) or Facility	Justification:
2.1	General Provisions	Yes	Entire Facility	The facility is subject to Title 20 Environmental Protection Chapter 2 Air Quality of the New Mexico Administrative Code so is subject to Part 1 General Provisions, Update to Section 116 of regulation for Significant figures & rounding. Applicable with no permitting requirements.
2.3	Ambient Air Quality Standards	Yes	Entire Facility	**NSR:** 20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide.
2.7	Excess Emissions	Yes	Entire Facility	Applies to all facilities' sources.

STATE REGU-LATIONS Citation 20 NMAC	Title	Applies (Y/N)	Unit(s) or Facility	Justification:
2.38	Hydrocarbon Storage Facilities	Yes	OT1-4	20.2.38 NMAC This regulation could apply to storage tanks at petroleum production facilities, processing facilities, tanks batteries, or hydrocarbon storage facilities.
2.61	Smoke and Visible Emissions	Yes	FL1-2, RB1-3, ENG1-9, ENG11-12, HTR1, VC1	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless your equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC).
2.70	Operating Permits	Yes	Entire Facility	The source is a Title V Major Source as defined at 20.2.70.7 NMAC.
2.71	Operating Permit Fees	Yes	Entire Facility	Source is subject to 20.2.70 NMAC as cited at 20.2.71.109 NMAC.
2.72	Construction Permits	Yes	Entire Facility	NSR Permits are the applicable requirement, including 20.2.72 NMAC.
2.73	NOI & Emissions Inventory Requirements	Yes	Entire Facility	Applicable to all facilities that require a permit. PER **>** 10 tpy for a regulated air contaminant.
2.74	Permits-Prevention of Significant Deterioration	No	NA	The facility is not a major PSD site.
2.75	Construction Permit Fees	Yes	Entire Facility	This facility is subject to 20.2.72 NMAC
2.77	New Source Performance Standards	Yes	See Sources subject to 40 CFR 60	Applies to any stationary source constructing or modifying and which is subject to the requirements of 40 CFR Part 60.
2.78	Emissions Standards for HAPs	No	See Sources subject to 40 CFR 61	The facility does not fit into any of the source categories.
2.79	Permits - Nonattainment Areas	No		This facility is not located in, not does it affect, a nonattainment area.
2.82	MACT Standards for Source Categories of HAPs	Yes	See sources subject to 40 CFR 63	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.

12.0 Federal Regulatory Analysis:

Federal Regulation	Title	Applies (Y/N)	Unit(s) or Facility	Comments
Air Programs Subchapter C (40 CFR 50)	National Primary and Secondary Ambient Air Quality Standards	Yes	Entire Facility	Independent of permit applicability; applies to all sources of emissions for which there is a Federal Ambient Air Quality Standard.
NSPS Subpart A (40 CFR 60)	General Provisions	Yes	See sources subject to a Subpart in 40 CFR 60	Applies if any other subpart applies. Subparts JJJJ and OOOOa apply.
40 CFR Part 60 Subpart JJJJ (Quad -J)	Standards of Performance for Stationary Spark. Ignition Internal Combustion Engines	Yes	ENG1-9, ENG11-12 TBD	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (5) of section 60.4230. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. The construction date for the engines will be after the applicability date of June 12, 2006 in 60.4230 (a)(4). After acquisition of engines, a determination of applicability will be made for each engine to be used at the site.
NSPS 40 CFR Part 60 Subpart OOOO (Quad -O)	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	NA	The site will be constructed after 9/18/15. Therefore, this regulation does not apply.
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After	Yes	FUG, Compressors for ENG1-9, ENG11-12	The site is subject to leak monitoring from fugitive components, per §60.5397a. The oil and water storage tanks will be constructed after the applicability date; however, the produced water tanks (WT1-2) emissions are < 6tpy by a flare with 98% collection efficiency, therefore, do not fall under OOOOa. The condensate tanks

Federal Regulation	Title	Applies (Y/N)	Unit(s) or Facility	Comments
	September 18, 2015			(OT1-4) are controlled to < 6 tpy with a vapor combustor as control; therefore, they are not subject to this subpart. Per §60.5365a(c), the compressors associated with engines (ENG1-9, ENG11-12) are subject to the control standards of §60.5385a.
NESHAP Subpart A (40 CFR 61)	General Provisions	No	See sources subject to a Subpart in 40 CFR 61	Applies if any other subpart applies.
MACT Subpart A (40 CFR 63)	General Provisions	Yes	See sources subject to a Subpart in 40 CFR 63	Applies if any other subpart applies. Subparts HH and ZZZZ apply.
40 CFR 63.760 Subpart HH	Oil and Natural Gas Production Facilities –	Yes	DEHY1-3	The facility is a natural gas production field facility, located prior to the point of custody transfer, under definitions in 63.761. Therefore, the definition of Major Source in 63.761 provides that only HAP emissions from glycol dehydration units and storage vessels shall be aggregated for a major source determination. AREA SOURCE (Minor for HAPs): given the definitions above, this facility is an area source under HH. The facility contains affected sources (TEG glycol dehydrators, 63.760(b)(2)). The dehydrators process more than 3 mmscfd; however, since benzene emissions are less than 1 tpy, there are no applicable requirements. (See §63.764(E)(1)). The facility is only required to maintain records of the determination as required in §63.774(d)(1).
40 CFR 63 Subpart ZZZZ (Quad Z)	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating	Yes	ENG1-9, ENG11-12 TBD	A facility is subject to this subpart if they own or operate a stationary RICE at an area source of HAP emissions, except if the stationary RICE is being tested at a

Federal Regulation	Title	Applies (Y/N)	Unit(s) or Facility	Comments
	Internal Combustion Engines (RICE MACT)			stationary RICE test cell/stand. After acquisition of engines, a determination of applicability will be made for each engine to be used at the site.
40 CFR 64	Compliance Assurance Monitoring	No	NA	The facility is not subject to CAM under 20.2.72 NMAC.
40 CFR 68	Chemical Accident Prevention	No	NA	The facility does not store any chemicals above threshold quantities of a regulated substance as determined under §68.115 and 68.130 List of substances.
40 CFR 70	Title V- State Operating Permit Programs	No	NA	Operating Permit Program – is not applicable – New Mexico State has full delegated authority and Title V is administered under 20.2.70 NMAC.
Title VI – 40 CFR 82	Protection of Stratospheric Ozone	No	NA	The facility does not service, maintain, or repair equipment containing refrigerants.

13.0 Exempt and/or Insignificant Equipment that do not require monitoring:

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)
ROAD	Haul Road Emissions	N/A	N/A	N/A	20.2.72.202.B.5
			N/A	N/A	20.2.72.202.B.5

14.0 New/Modified/Unique Conditions (Format: Condition#: Explanation):

A. Date of Monitoring Protocol used for IC Engines: December 11, 2019
B. Date of Monitoring Protocol used for Tanks & Loading: September 19, 2017
C. Date of Monitoring Protocol used for Glycol Dehydrators: February 12, 2018
D. Date of Monitoring Protocol used for Boilers/Heaters: protocol 8/18/17
E. Date of NSR Part A. Permit template is November 22, 2019.
F. A106.B: Added Table 106.B.
G. A107.C: Added SSM Flaring conditions.
H. A107E: Added Malfunction Venting emissions.
I. A111: Removed FL1, FL2, and VC1 from this condition.

J. A201A: Removed Notification of Catalysts Installation.
K. A201G: 40 CFR 60, Subpart OOOOa condition was moved to Section A209.B
L. A201E: Removed condition corresponding to ENG13. Condition is no longer applicable because ENG13 was removed.
M. A203C: Removed Vapor Combustor (Unit VC1): Control Device for Oil Tanks (Units OT1-4), Gunbarrel Separators (GB1a and GB1b), Low-Pressure Separator (LPS), Produced Water Tanks (Units WT1 and WT2), and Uncondensed Vapors from BTEX Condensers (Units COND1-COND3).
N. Added new conditions A203C: Flares (Units FL1, FL2): Control Device for Condensate Tanks (Units OT1-4), Produced Water Tanks (WT1, WT2), and Skim Tanks (SKT1, SKT2); and A203D: Low Pressure Separator (LPS) and Control Devices (Vapor Recovery Units VRU1, VRU2 and Flares FL1, FL2).
O. A206C: Removed Flare Emissions and added new Flare Emissions Calculation.
P. A206D: Added Condition for flare Parametric Monitoring for Low Pressure Sides - Low Pressure Side Pilots and Vapors from Condensate Tanks (Units FL1, FL2).
Q. A207A and A207B were moved to A210A and A210B.

15.0 For Title V action: Cross Reference Table between NSR Permit 8152M1 and TV Permit. NSR permit conditions cross referenced to the TV permit are federally enforceable conditions, and therefore brought forward into the TV permit:

Not Required, a TV permit has not been issued.

16.0 Permit specialist's notes to other NSR or Title V permitting staff concerning changes and updates to permit conditions.

A. This facility, as proposed, is a major source and therefore a Title V facility, once operations begin as represented in the application.
B. A 40 CFR 64 Compliance Assurance Monitoring applicability analysis should be determined and, if appropriate, include the plan in the initial TV application for engines, dehydrators, and/or tanks.
C. Notes on hazardous air pollutants (HAPs) and toxic air pollutants (TAPs):

The contents of an NSR application, per 20.2.72.403.A(1) NMAC, shall contain the identification of all toxic air pollutants that may be emitted in excess of the screening level (specified in pounds per hour) in 20.2.72.502.NMAC.

Jayhawk Compressor Station is not a gas processing plant or a refinery and, therefore, meets the definition of an oil and gas production facility, per 20.2.72.401.F NMAC. As an oil and gas

production facility, it is exempt (in 20.2.72.402.C NMAC) to applicability and any requirements of 20.2.72.400 NMAC - 20.2.72.405 NMAC for toxic air pollutants.

The facility is required to report the Potential to Emit from any HAP at rate greater than or equal to one ton per year. HAPs are subsets of Volatile Organic Compounds (VOCs) and are typical in the oil and gas sector. The facility is not a major source of HAPs as defined in the regulations.